This small book may be confidently recommended to scientist and lay person alike as being concise and eminently readable.

D. A. WILLOUGHBY

GENETICS

Darlington, C. D. *Genetics and Man.* London, 1964. Allen and Unwin. Pp. 382. Price 42s.

PROFESSOR DARLINGTON is a striking character in the current genetical scene. He is controversial; he loves to speculate; one may not agree with what he says—and indeed one may not always understand what he means—but he is never dull.

His book is a revised edition of the 1953 *Facts of Life*, with a new title and several new sections, and it is intended as a history of man's genetic understanding of himself. The story is traced back to the beliefs of Aristotle and of the authors of the Bible and extends forward to include breeding advice for the atomic age—hence its particular appeal to eugenists. It will give pleasure to most people of catholic tastes, and not the least of the interest derives from the way Darlington manages to rationalize his very obvious enjoyment of the humanities. The book is a most civilized exposition of many aspects of life, and because he is a geneticist, sex is seen as a prime activity in human society as well as a biological necessity for the continuation of the species.

However, the book has much more than general interest. The historical sections include information on all the most famous figures, most notorious controversies and most striking frauds in the history of genetics, and form a background for detailed descriptions of modern views on the physical basis of heredity and in particular of the role played by cytology. Darlington's philosophic imagination and curious mind enable him to relate this information to subjects such as immortality, free will and determinacy, statistical laws and uncertainty, the genetics of self-interest, instincts and morals, celibacy, homosexuality, divorce, sexual variation and cousin marriage. The most interesting section, however, from the eugenist's standpoint, is that on human society, its evolution and its future. Already art, originally a by-product of useful activities, has become an end in itself. The same is true of sex, where not only intercourse but marriage is sufficiently justified by the pleasure of two individuals irrespective of propagation. On the other hand, the two great ancient religions, Hinduism and Judaism, fostered the belief in the virtue of reproduction and the Chinese held strongly to the duty of becoming an ancestor. Clearly belief in the virtue of reproduction has had a high selective value, and all three peoples therefore triumphed over their losses from famine, war, pestilence, persecution and a high infant mortality. Now that these perils have to a great extent been conquered by the science and techniques of the west, many populations are multiplying out of all proportion to those races whose enterprise has allowed them to do so. In Darlington's opinion the state, which already accepts much responsibility for nutrition, health and education from the womb to the tomb, must in the future control fertilization, for it is only by breeding from the best stock and reducing the population scientifically that we shall be prevented from committing indiscriminate suicide in an atomic holocaust. Darlington is cheerfully pessimistic about the future, but if science is blended with common sense the situation can still be saved. In any case we have been warned in a most compelling way.

C. A. CLARKE

Kormondy, Edward J. *Introduction to Genetics—A Program for Self Instruction.* New York and London, 1964. McGraw-Hill. Pp. xiv+255. Price 31s.

PROGRAMMED LEARNING AND teaching is often associated with large and expensive machines but many non-branching programmes can be put in book form and this book is such a programme printed out successfully.

Elementary genetics is perhaps one of the easiest biological topics to teach by steps and it is not surprising that someone has tried it. The author makes clear that the programme is no substitute for lectures and textbooks but must be used along with them. He aims "to develop vocabulary, principles and concepts concerning cell reproduction and basic genetics"

and though the practising teacher may be dismayed at the very few illustrations he will soon realize that ground is carefully and logically covered and a good deal of factual material is incorporated and goes well beyond what a British A-level Biology syllabus would demand. Topics include cell reproduction, gametogenesis, basic Mendelian genetics, sex determination, linkage, chromosome mapping, multiple factor inheritance, multiple alleles, the biochemical nature of genetic material, cytoplasmic inheritance and a simple introduction to population genetics.

The method used is to provide an introduction to the subject and then set out questions to test how much has been assimilated. Further questions add and consolidate more information. Answers are printed on the left hand side of the page and are kept covered until a question has been answered. Each section ends with a summary and a list of new terms learned. The method has some surprises for those used to conventional teaching, e.g. DNA is discussed without the formulae for adenine, thymine, guanine and uracil being shown but this is entirely consistent with the author's aims and in no way detracts from the book's value. One or two questions need slight amendment to remove ambiguity; when material is pared down to its essentials every sentence and word should be weighed to see that the intended meaning is exactly conveyed. Without testing on students the reviewer thinks that the aims are successfully achieved.

It is likely that this and other programmed texts will make a considerable contribution to teaching methods and practice and therefore deserve careful attention.

K. W. WILKES

CRIME

Eysenck, H. J. *Crime and Personality*. London, 1964. Routledge and Kegan Paul. Pp. xv+204. Price 25s.

IN THIS BOOK Professor Eysenck attempts to relate his well-known theories of personality to the problem of crime. He distinguishes sharply, albeit without defining his terms, between criminal and law-abiding citizens. Using his introversion-extraversion continuum, he suggests that most criminals belong somewhere to the right of this scale, according to the intensity of their criminality. The most criminal personality will have the highest extraversion-neuroticism score, unless they have been reared by criminal parents, in which case they should show a high introversion score. The extent to which each person is introvert-extravert is determined by heredity and since extraverts condition poorly, they are liable to become criminals. Society should respond by subjecting offenders to an intensive process of conditioning.

There is no point in trying to evaluate Eysenck's psychological theories here, though it is well to remember that they are a long way from being universally accepted. Although modern criminology has virtually rejected the notion of "causes of crime", Eysenck puts forward a general theory of crime in which criminal behaviour is always rooted in the individual. But he makes no attempt to explain at least some of the outstanding social factors related to crime. Thus for example, we do not, and probably never will, know the actual distribution of criminal behaviour in a given population. Of the crimes that are known to have been committed, say in England and Wales, only about 45 per cent are solved, and less than 20 per cent of those convicted find their way into prison. Yet many arguments in this book are based on the study of prisoners, but how representative a sample of the criminal population are they likely to be—even assuming that they represent a reasonably homogenous group, which, in fact, they do not. Again we might look at the age factor. About 50 per cent of those convicted of indictable offences are under twenty-one and most of these will cease to be criminal when they cease to be juvenile. If these juveniles are in the main poorly conditioned extravert-neurotics, what induces them to become "law-abiding citizens"? Or let us take the problem of the sex differential. If the introversion-extraversion continuum has a similar distribution to that of intelligence, height and weight, then we should expect a fairly even incidence of criminal behaviour between the sexes, at least in open societies like our own. Yet the actual ratio between males and